LISTS OF PROJECTS ON

ANIMAL FATS (ERRL)

VEGETABLE FATS & OILS (SRRL & NRRL)

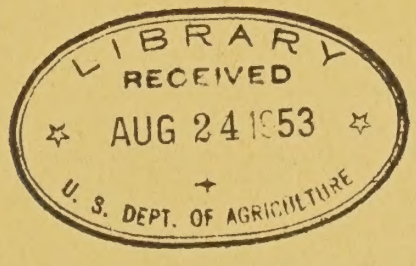
ARRANGED ACCORDING TO

STORAGE AND PROCESSING

FOOD AND FEED USES

NON-FOOD USES

(The listing under each grouping is more or less arbitrary, since overlapping exists in some instances. Corrections should be indicated, if desirable.)



June, 1953

ANIMAL FATS

Eastern Regional Research Laboratory

u-6-3 ANIMAL FATS AND OILS AND SPECIAL PRODUCTS UTILIZATION INVESTIGATIONS

Total funds, 1953 - $372,667
Total Active Contracts $154,682
1953 Contract 30,199

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PROJECTS

A - STORAGE AND PROCESSING

B - FOOD AND FEED USES

C - NON-FOOD USES

A - STORAGE AND PROCESSING (Total funds - $)

None ?

B - FOOD AND FEED USES (Total funds - $)

u-6-3-12(R) Development of improved shortenings for military and civilian use from lard and other meat fats as the principal raw material by means of hydrogenation and use of additives: Development of laboratory apparatus and methods suitable for chilling and plasticizing shortening. $ 33,200

u-6-3-18(R) Improvement of the physical properties of lard and other meat fats to make them more satisfactory for the preparation of baked products and various rations of the Armed Services: Study of the glyceride distribution in meat fats as an important factor governing physical characteristics. $ 31,200

u-6-3-22(C) Increased use of stabilized industrial fats in the production of prepared feeds (Amer. Meat Inst. - 1950 - $38,136)

u-6-3-27 Development of improved shortenings for military and civilian uses from animal fats: Investigation of the chemical nature of unsaponifiable and other minor constituents of lard and tallow. $ 12,400

u-6-3-28(C) Effect of adding animal fats to mixed feeds on the stability and utilization of vitamin A and carotene (Contract Proposal for 1954 - $20,000 - 30,000)

C - NON-FOOD USES (Total funds - $)

u-6-3-3 (R) Evaluation of compounds derived from animal fats as plastics, plasticizers, adhesives and coatings for essential military and civilian use by determination of physical properties such as tensile strength, modulus, elongation, brittle point, resistance to various factors, viscosity and solubilities, and molecular weights (AP Div.) $ 21,700

u-6-3-4 (R) Pilot-plant scale studies on the fractionation of animal fats for the production of special purpose liquid lubricants and industrial oils (ED Div.) $ 37,000

u-6-3-5 (R) Catalytic oxidation of animal fats to peroxides and hydroxy-, keto-, and epoxy- acids for use in the preparation of lubricating greases for military and essential civilian use as polymerization catalysts in synthetic rubber manufacture and as intermediates in oxidative cleavage processes. $ 42,000

u-6-3-6 (R) Preparation of polymers from long-chain acids and alcohols from animal fats for use as water-repellent agents for fabrics for military purposes. $ 21,700

u-6-3-7 (R) Preparation of substituted amides from animal fats for such applications as waterproofing agents and high-melting waxes. $ 20,600

u-6-3-9 (R) Investigation of fatty acids and alcohols derived from tallow as replacements for imported coconut oil in synthetic detergents for civilian and military needs. $ 45,400

u-6-3-13(R) Utilization of the constituents of wool grease: Development of methods of isolating and characterizing the non-steroid constituents of the non-acidic fraction obtained by saponification of wool wax. $ 38,000

u-6-3-14(R) Utilization of the constituents of wool grease: Development of methods for isolating and characterizing the hydroxy fatty acids present in the acidic fraction obtained by saponification of wool wax. $ 24,000

u-6-3-16(R) Investigation of the chemical oxidative cleavage of animal fats to dibasic acids essential for the production of such important military items as high quality synthetic lubricants, plasticizers and high tenacity nylon $ 26,200

u-6-3-23(C) Investigations of the vacuum, non-destructive distillation of fatty acids and esters (Penn. State College, 1951 - $35,000)

u-6-3-24(C) Solubility studies on both pure saturated and unsaturated fatty acids (etc.) and mixtures of fatty acids (etc.) in a variety of organic solvents (Univ. of Minn. - 1951 - $32,326)

u-6-3-25(C) Preparation of vinyl esters and vinyl ethers of long chain fatty acids and alcohols (Gen. Aniline & Film Corp. - 1951 - $19,021)

u-6-3-26(C) Determination of dielectric constants and dipole moments of organic peroxides in order to clarify their structure as an aid in the development of useful products such as dibasic acids from them (Univ. Pa.,1953) $ 30,199

u-6-3- (C) Investigations on heat transfer properties of fatty acids and fatty acid esters looking to the development of basic information necessary in improved processing of animal fats and their derivatives for use in industry (Contract Proposal for 1954 - $ 30,000)

OILSEEDS

Southern Regional Research Laboratory

u-4-1 COTTONSEED, PEANUTS, AND OTHER OILSEED UTILIZATION INVESTIGATIONS - SOUTHERN REGION

Total funds, 1953 - $667,263*
Total Active Contracts $ 69,767
1953 Contracts none

*Laboratory received - $553,448

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PROJECTS

A - OILSEED STORAGE AND PROCESSING

B - FOOD AND FEED USES

C - NON-FOOD USES

A - OILSEED STORAGE AND PROCESSING (Total funds - $)

u-4-1-2 (R) Investigation of the yield and quality of tung oil produced during commercial milling of tung fruit to discover opportunities for improving yield of high-quality oil (Bog.) $ 16,428

u-4-1-4 (R) Development of method of preparing cottonseed meats for extraction to improve yields and quality of oil and meal needed for military and essential civilian food and feed uses (ED Div.) $ 52,358

u-4-1-5 (R) Development and evaluation of filtration-extraction as an efficient process for increasing the recovery of food oil and improving quality of meal from cottonseed to meet increasing demands for these products for military and essential civilian food and feed uses (ED Div.) $ 80,805

u-4-1-14(R) Determination of certain chemical characteristics of cottonseed and the oils and meals made by different methods of commercial processing to produce oils of improved quality for military and essential civilian food uses, and meals of higher nutritive value for animal feed. $ 13,486

u-4-1-15(R) Determination of composition of cottonseed as influenced by environment and variety to aid selection of seedstock for maximum production in different areas and segregation of processed oils for different food uses (AP Div.) $ 5,956

u-4-1-17(C) Investigation of the variables concerned in the hydraulic pressing of cottonseed to determine how improvements can be affected (ED Div.-Univ. Tenn. - 1949 - $20,000)

u-4-1-18(C) Investigation of the variables concerned in the continuous screw pressing of cottonseed to determine how improvements can be affected (ED Div.- Texas Eng. Exp. Sta.- 1949 - $29,650)

u-4-1-25(R) Development of means for reducing losses of edible cottonseed oil, needed for military and essential civilian food, by identification and control of fat-splitting microorganisms (May be renumbered) $

u-4-1-29 An engineering cost analysis of solvent extraction methods and facilities to evaluate feasibility for small mill processing of cottonseed (ED Div.) $ 15,231

u-4-1- Cleaning of cottonseed and linters at cottonseed oil mills (Title tentative) $

u-1-4- Exploratory investigation of processes for refining rice oil to improve yield and quality of refined oil ($13,000 for 1954 ?)

u-4-1- (C) Investigation of the properties and reactions of gossypol to provide basic data to aid the development of new processing conditions to improve the quality of commercial cottonseed meal and oil (Contract Proposal for 1954 - $15,000)

B - FOOD AND FEED USES (Total funds - $)

u-4-1-6 (R) Development of a practical solvent process for winterizing or fractionating refined and bleached cottonseed oil to provide the industry with improved methods for making salad oils liquid at refrigerator temperatures and tailor-made fats for use as edible coatings in essential foodstuffs (ED Div.) $ 12,454

u-4-1-9 (R) Determination of the relationship between utility and physical properties of enrobing fats, highly plastic fats, and other products derived from cottonseed in order to prepare global spreads and other food items required by the Armed forces. $

u-4-1-16(R) Development of chemical methods for estimating nutritive value of cottonseed meals to improve production control and thereby increase dietary value of protein feeds needed for military and essential civilian meat production. $ 15,000

u-4-1-19(C) Study of the influence of methods of processing of cottonseed meal on the utilization of the meal in foods (baked goods)(Oklahoma, 1951 - $20,117)

u-4-1-20(R) Development of stabilized and vitamin-fortified peanut butter of improved quality for military rations $ 34,620

u-4-1-21(R) Development of new type fats (acetostearins, acetooleins, etc.) from cottonseed oil for use in intravenous feeding, enrobing (coating) of military rations and plasticizing hard fats, waxes, and polymers (includes non-food uses). $ 14,562

u-4-1-22(R) Application of selective hardening (hydrogenation) to the development of improved shortening, margarine, and enrobing (coating) fats from cottonseed oil for military and essential civilian use. $ 9,406

u-4-1-27 Development of means for producing cottonseed meals suitable for unrestricted feeding to swine and poultry by use of chemical treatments to inactivate a growth-inhibiting constituent (gossypol) in the seed. $ 30,350

u-4-1-28 Determination of the effect of progressive hydrolysis of the allergenic components of cottonseed protein, in counteracting the harmful action of these components in foods and in medical and industrial applications (ARD)$ 36,000

u-4-1-30 Development of a practical solvent process for winterizing or fractionating refined and bleached peanut oil to provide the industry with improved methods for making salad oils liquid at refrigerator temperatures and tailor-made fats for use as edible coatings in essential foodstuffs (ED Div.) $ 9,920

u-4-1-31 Modification of chemical and physical properties of peanut protein by chemical reagents to obtain new type products for use in foods, coatings for military ration items, and blood plasma extenders(includes non-food use)$

u-4-1-34 Developing means for increasing the supply of high grade cottonseed oil by the isolation, identification and removal of pigments, responsible for the color of refined and bleached oil (for item A ?) $ 28,707

u-4-1- Investigation of gossypol-metallic ion complexes as an approach to inactivating gossypol in the production of cottonseed meals of higher nutritive value for animal feeding. $

u-4-1- Determination of the nature of the changes which gossypol undergoes in cottonseed meals during processing which result in the formation of "bound" gossypol for the purpose of gaining information to aid in the control and direction of those changes toward the production of meals of higher nutritive value for animal feed. $

u-4-1- (C) Isolation and characterization of alcohol soluble toxic component(s) in tung kernels to aid development of new uses, including feed, for tung meal (Contract Proposal for 1954 - $20,000)

C - NON-FOOD USES (Total funds - $)

u-4-1-8 (R) Exploratory investigation of the transformation of unsaturated fatty acids present in cottonseed oil foots into products useful as plasticizers, lubricants, and surface active agents. $ 35,618

u-4-1-23(R) Chemical modification of tung oil fatty acids by means of mercury containing compounds to give products useful as fungicides, insecticides, and plant growth regulators (Bog.) $ 22,842

u-4-1-32 Development of new type fats (acetostearins, acetooleins, etc.) from peanut oil for use in intravenous feeding, enrobing (coating) of military rations, and plasticizing hard fats, waxes, and polymers (includes food uses) $

u-4-1-33 Characterization of sterols, fatty acids, and other components of present and potential value from cottonseed oil foots to provide basic data needed in development of new outlets. $

u-1-4-3 (R) Development of a practical process for recovery of rice bran wax to replace imported carnauba used for desensitizing high explosives ($).

OILSEEDS

Northern Regional Research Laboratory

u-4-2 SOYBEAN AND OTHER OILSEED UTILIZATION INVESTIGATION - NORTHERN REGION

Total funds, 1953 - $422,394*
Total Active Contracts $137,289
1953 Contracts $ 41,459

*Laboratory received $393,196

PROJECTS

A - OILSEED STORAGE AND PROCESSING

B - FOOD AND FEED USES

C - NON-FOOD USES

A - OILSEED STORAGE AND PROCESSING (Total funds - $)

u-4-2-7 (R) Investigation on a pilot-plant scale, of the alkali-refining of soybean oil and the addition of crude phosphatides for the purpose of producing a refined oil of improved flavor stability for civilian consumption and for utilization in military rations (ED Div.) $ 39,800

B - FOOD AND FEED USES (Total funds - $)

u-4-2-2 (R) Determination of the effects of water-soluble components of soy flour on the characteristics of bread, to improve the protein quality for military and civilian baked goods. $ 22,500

u-4-2-3 (R) Development of fat-soluble metal deactivating compounds for improving stability of soybean oil shortenings for use in Army rations and civilian products. $ 36,200

u-4-2-9 (R) Studies on the relation between undesirable flavors and compounds produced in the autooxidation of linolenic acid, a constituent of soybean oil, to secure data necessary for the flavor improvement of the oil for use in Army rations and essential civilian products. $ 30,200

u-4-2-10(C) Volatile oxidative products derived from more polar polymers containing dienoic and trienoic conjugation derived from linolenic esters(Univ. Ill.-1951-$20,000)

u-4-2-11(R) Development of methods of incorporating soy flour into bread and other bakery products, to improve the protein quality of military and civilian baked goods. $ 32,000

u-4-2-13(C) Isolation and identification of anti-soybean-growth-inhibitor (Neb. Sta., 1951 - $18,500)

u-4-2-17(R) Development of a global edible spread from soybean oil, and other vegetable oils of the Northern Region for bread in military rations. $ 28,781

u-4-2-18(C) Toxicity of soybean oil meal resulting from extraction with trichloroethylene; Determination of the quantitative toxicity of trichloroethylene extracted soybean oil meal (TESOM) to young cattle and of the possible toxicity of TESOM to swine and poultry(Minn,1952-$36,530)

u-4-2-19(C) Toxicity of soybean oil meal resulting from extraction with trichloroethylene; Development of assay methods for toxicity using calves and guinea pigs(Iowa,1952-$20,800)

u-4-2-20 Toxicity of soybean oil meal resulting from extraction with trichloroethylene: Preliminary chemical characterization of the cause of toxicity. $ 39,000

u-4-2-21 Development of an improved method for color-grading green soybean oil from frost-damaged soybeans to increase supplies of edible oil essential to civilian and military use (AP Div.) $ 11,300

u-4-2-22(C) Laboratory and commercial testing of alcohol-washed soybean flakes, water solubles of hexane flakes, and other soybean protein fractions and concentrates to determine their utility as a component of frozen confections, and special meat products for civilian and military consumption (Food Tech. Inc., 1953) $10,000

u-4-2-23 Development, on a pilot-plant scale, of methods for producing a global edible spread suitable for civilian consumption and Army rations (ED Div.) $ 13,000

u-4-2-24(C) Chemical and physical characterization of the toxic protein isolated from untoasted hexane-extracted soybean oil meal (Univ. Minn., 1953) $ 20,059

u-4-2-28 Studies on the relation of pigment composition and other minor constituents to color and browning of soybean phosphatides to increase their suitability for food use. $ 4,600

u-4-2-29 Isolation and identification of the beany or bitter principles in soybeans, substances that impart undesirable flavors to edible soybean products thereby reducing their consumption. $ 7,100

u-4-2- (C) Studies on the isolation and identification of the toxic factor in TESOM, including fractionation of the toxic factor, preparation of model compounds, and bioassay with the guinea pig(Contract Proposal for 1954 - $45,000)

u-4-2- (C) Studies on the use of a reference standard in the development of a quantitative assay of the biological effects of trichloroethylene-extracted products from soybeans (Contract Proposal for 1954 - $30,000)

C - NON-FOOD USES (Total funds - $)

u-4-2-30(C) Survey of the market potential for soybean, linseed, and related fats and oils as concerns their drying uses. (Batelle Inst., with BAE; total $25,652 - Baic portion, 1953) $ 11,400